ON AUSTRALIAN HERSILIIDAE FROM THE SOUTH AUSTRALIAN MUSEUM (ARACHNIDA: ARANEAE) SUPPLEMENT TO THE REVISION OF THE AUSTRALIAN HERSILIIDAE

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A collection of hersiliid spiders from the South Australian Museum is examined. *Tamopsis forresti* sp. nov. from north-western Queensland and *T. ediacarae* sp. nov. from central south Australia are newly described. New records are given for *T. eucalypti* (Rainbow), *T. queenslandica* Baehr & Baehr, *T. raveni* Baehr & Baehr, and *T. fickerti* (L. Koch), mainly from South Australia and central Australia, and the ranges of some species are considerably extended.

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The collection of Hersiliidae from the South Australian Museum, Adelaide (SAMA), comprises about 25 specimens from Queensland, South Australia and Western Australia. Because two new species and several new records, mainly from central Australia, are involved, it is worth noting in a separate paper, regarded as a supplement to our recent revision of the Australian Hersiliidae (Baehr & Baehr 1987). This supplement is evidence of the little known fauna of more remote regions of Australia, especially in inland areas. Measurements were taken as indicated previously (Baehr & Baehr 1987).

Abbreviations

ALE – anterior lateral eye
AME – anterior median eye
bS – basal segment of posterior lateral spinneret
LB – total length of body
LL – total length of 1st leg
PLE –posterior lateral eye
PLS – posterior lateral spinneret
PME – posterior median eye
tS – terminal segment of posterior lateral spinneret
I – 1st leg
II – 2nd leg
III – 3rd leg
IV – 4th leg

Classification

In our revision of the Australian Hersiliidae all known species were transferred from *Chalinura* or *Tama*, respectively, to a new genus *Tamopsis*. All newly described species, with exception of the singular *Hersilia australiensis* Baehr & Bachr, also belong to *Tamopsis*. As the collection from the SAMA comprises only species of *Tamopsis*, apart from a single juvenile *Hersilia* specimen (N11979100) which we are unable to determine, no generic diagnosis needs to be included.

Tamopsis eucalypti (Rainbow)

Tama eucalypti Rainbow, 1900: 487

This species is widely distributed in south-eastern Australia from south-east Queensland through eastern New South Wales, Victoria to Eyre Peninsula in South Australia. Specimens from SAMA are identified by the conspicuous shape of the female vulva.

New records

South Australia: 2 females (N 1987181), Belair NP, Mt Lofty Ranges, i. 1936, Coll. H. Womersley; 1 female (N1987182), Fullarton, Adelaide, x. 1935, Coll. H. Womersley; 5 females (N 1987183), Adelaide, 1936, Coll. H. Womersley.

Tamopsis cf. *queenslandica* Baehr & Baehr (Fig. 4)

Baehr & Baehr, 1987: 372

This species was newly described from a male and female from southern Queensland and from New South Wales, respectively. It belongs to a group of several closely related species characterized by the depressed eye area and rather similar male palpi and female vulvae (see Baehr & Baehr 1987).

The single specimen from the SAMA is doubtfully assigned to *T. queenslandica* by virtue of the shape of its female vulva. This assignment, however, is somewhat hypothetical, because the specimen was apparently dried out and, as a consequence, is rather damaged. Hence the vulva is difficult to examine. If our determination is right, this would mean a considerable expansion of the range of this species right through

central Australia to the Northern Territory–Western Australian border. It is worth noting in this connexion that both original records of *T. queenslandica* are from west of the Great Dividing Range. Perhaps this is an inland species.

New record

Western Australia: 1 female (N 1987184), Gill Pinnacle, Schwerin Mural Crescent, 24°54'S, 128°46'E, xi. 1963, Coll. P. Aitken & N.B. Tindale.

Tamopsis raveni Baehr & Baehr (Fig. 4)

Baehr & Baehr, 1987: 373

Another species of the *queenslandica* group and extremely closely related to *T. queenslandica*. *T. raveni* was previously known only from a single locality in south-east Queensland. The single female specimen from the SAMA is assigned to this species mainly by the shape of its vulva.

New record

South Australia: 1 female (N 1987185), Oaktrees, Brown Hill Creek Reserve, Adelaide foothills, i. 1965, Coll. C. Luscombe. This record extends considerably the range of *T. raveni* to the south-west.

Tamopsis forresti sp. nov. (Figs 1, 2, 4)

Types

Holotype: male (N 1987186), N.W. Queensland, 1.5 km W. by N. of Riversleigh Homestead, collected by beating bushes on dry area above Gregory River, 30. iv. 1986, Coll. J. A. Forrest. Paratype: 1 female (N 1987187), same data.

Diagnosis

Medium sized species with high eye area, large AME and moderately elongate legs, recognized by male palpus with a large, spoon-shaped, hooked process and a small lateral process on median apophysis and with three elongate lateral processes at apex of lateral apophysis, and by unique shape of female vulva.

Description of holotype (male)

Measurements: Body length: 3.48 mm. Cephalothorax length: 1.48 mm; width: 1.40 mm. Abdomen length: 2 mm, width: 1.65 mm. Legs: I: 10.04 mm, II: 9.28 mm, III: 3.72 mm, IV: 9.08 mm. Ratio: 1: 0.92: 0.37: 0.90. Ratio LB/LL: 0.35. PLS length: 1.84 mm; bS: 0.48 mm; tS: 1.36 mm. Eye ratio: 1: 0.33:0.78: 0.67.

Colour: Cephalothorax light brown, eye area, border, several radial spots, and dorsal groove piceous to blackish. Clypeus dirty white, with two dark spots. Chelicerae greyish to brown. Abdomen mottled, with distinct lancet-shaped median stripe and lateral borders dark; posteriorly with some transverse light and dark bands. Ventral surface light. Legs light, conspicuously annulate, femora anteriorly–ventrally striped with black.

Cephalothorax: Circular, slightly narrower than abdomen. Eye area considerably raised, clypeus slightly higher than eye area. AME by far largest, PLE slightly smaller than PME. Distance AME/AME slightly less than diameter of AME, distance AME/ALE about equal to diameter of AME. Distance PME/PME about half of diameter of PME, distance PME/PLE about equal to diameter of PLE. Chelicerae about 1 ½ x as long as wide, posteriorly with 3 minute teeth. Sternum setose.

Abdomen: Elongate oval. Dorsally with 5 pairs of rather circular muscular pits. Ventral muscular pits in a v-shaped arrangement. PLS slightly shorter than abdomen.

Legs: Measurements see above. Moderately elongate, III slightly longer than 1/3 of I.

Palpus: Median apophysis strongly contorted, apex with wide, membraneous area within, terminally with a large, spoon-shaped process, and laterally with a shorter, curved process which is conspicuously napped outside. Lateral apophysis also contorted, apex deeply excised, laterally of excision bearing three elongate, slender, finger-like, hook-shaped structures. Inner finger apically curved away from palpus.

Description of paratype (female)

Measurements: Body length: 3.60 mm. Cephalothorax length: 1.44 mm; width: 1.40 mm. Abdomen length: 2.16 mm; width: 2.28 mm. Legs: I: 8.16 mm, II: 7.72 mm, III: 3.04 mm, IV: 7.44 mm. Ratio: 1: 0.95: 0.37: 0.91. Ratio LB/LL: 0.44. PLS length: 1.92 mm; bS: 0.48 mm; tS: 1.36 mm. Eye ratio: 1: 0.5: 0.88: 0.88.

Colour: Very similar to male holotype. Abdomen still more mottled, legs more contrastingly coloured.

Cephalothorax: Similar to male, but much narrower than abdomen. Clypeus slightly higher. Eyes smaller, especially AME smaller in relation to ALE, ALE nearly half as large as AME. PME and PLE of about equal size.

Abdomen: Slightly wider than long, rather triangular. Arrangement of dorsal and ventral muscular pits as in male. PLS slightly longer in relation to abdomen than in male.

Legs: Measurements see above. Moderately elongate, II about as long as in male.

Epigyne: Laterally with a large opening covered by a plate. Parts of vulva low, widely separated.

Vulva: With two receptacula seminis, though inner receptaculum characteristically bent and prolonged ventrally, apex slightly recurved. Only outer recep-

taculum glandular beneath capsule. Introductory duct bent, v-shaped, posteriorly produced.

Distribution

Thus far known from north-western Queensland close to Northern Territory border.

Habits

Not exactly known. Caught by beating bushes near river. Collected in April.

Relationships

This species is certainly closely related to *T. trionyx* Baehr & Baehr from southern Queensland. The male palpi of both species are fairly similar and they are recognized by their long, finger-like processes at the apex of the lateral apophysis. The palpus of *T. forresti*, however, differs in that the inner process of the lateral apophysis is curved outside rather than inwards, and that the median apophysis possesses a strong lateral process. As the female of *T. trionyx* is as yet unknown, nothing can be said on differences of female epigyne and vulva. The epigyne of *T. forresti*, however, is outstanding within the *tropica* group to the form of the inner receptaculum seminis.

Identification

For identification the key to species in our revision (Baehr & Baehr 1987) should be altered as following:

Couplet 16 – cancel 'Southern central Queensland ..... *trionyx* sp. nov.'

then add

'16 a. Lateral border of MA not modified to a spoon-like process, inner finger of LA curved inwards. Southern central Queensland, ... *trionyx* Baehr & Baehr

– Lateral border of MA modified to a spoon-like process, napped outside, inner finger of LA curved outwards. North-western Queensland ..... *forresti* sp. nov.'

Couplet 37 – alter to

'– Smaller species with wider body, less than 4.5 mm long. Legs and PLS rather stout. Lateral RS directed horizontally or posteriorly. Bridge of V not a narrow clasp ..... 37 a.'

then add

'37 a. Lateral RS very small, directed horizontally. ID not strongly v-shaped. North-western Queensland ..... *leichardtiana* Baehr & Baehr

– Lateral RS large, elongate, directed posteriorly, apex conspicuously incurved. ID strongly v-shaped. North-western Queensland ..... *forresti* sp. nov.'

Tamopsis ediacarae sp. nov.

(Figs 3, 4)

Holotype

Female (N 1987188), South Australia, Ediacara (W. of Leigh Creek), 15. v. 1961.

Diagnosis (male unknown)

Medium-sized species with high eye area, large AME, and rather elongate legs, characterized by vulva with two equal receptacula seminis on each side, strongly coiled basal parts of introductory ducts, and anteriorly a wide bar.

Description

Measurements: Body length: 4.64 mm. Cephalothorax length: 1.88 mm; width: 1.88 mm. Abdomen length: 2.76 mm; width: 2.62 mm. Legs: I: 14.08 mm, II: 13.40 mm, III: 4.60 mm, IV: 12.48 mm. Ratio: 1: 0.95: 0.33: 0.89. Ratio LB/LL: 0.33. PLS length: 2.48 mm; bS 0.68 m; tS: 1.80 mm. Eye ratio: 1: 0.4: 0.8: 0.9.

Colour: Light-coloured. Cephalothorax medially whitish, laterally dark yellow. Eye area, lateral borders, and some radial spots blackish. Clypeus and chelicerae wholly yellow. Abdomen rather light, slightly mottled, with lancet-shaped median stripe and lateral borders fading brown. Legs and palpi very light, inconspicuously annulate. PLS laterally near base and apically in last third with distinct dark spots.

Cephalothorax: Circular, as long as wide. Eye area strongly raised, clypeus slightly higher than eye area. Eyes rather small, AME largest, PME slightly smaller than PLE. Distance AME/AME slightly less than diameter of AME. Distance PME/PME more than half of diameter of PME, distance PME/PLE about equal to diameter of PLE. Chelicerae rather elongate, about $1^3/_4$x as long as wide. Sternum heart-shaped, setose.

Abdomen: Rather wide, almost as wide as long, slightly trapezoidal, much wider than cephalothorax. Dorsally with 5 pairs of circular muscular pits. Ventral muscular pits in a slightly v-shaped arrangement. PLS rather short, considerably shorter than abdomen.

Legs: Measurement see above. Elongate, III c. 1/3 as long as I.

Epigyne: Laterally with an opening covered by a plate. Parts of vulva widely separated, anteriorly with a wide, sclerotized bridge.

Vulva: Wide, with two receptacula seminis and a basal bulbus on each side. Receptacula glandular in basal half. Introductory duct basally strongly coiled and produced outwards.

Distribution

Lake Eyre Basin, central eastern South Australia.

Habits

Unknown, type collected in May.

Relationships

T. ediacarae belongs to the large *tropica* group. Judging from the shape of the female epigyne and vulva and from relative length of legs and PLS, *T. ediacarae* is certainly most closely related to *T. pseudocircumvidens* Baehr & Baehr from south-west-

ern Australia which has a fairly similar vulva. However, the following differences are to be noted: lack of conspicuous median black stripe on clypeus in *T. ediacarae*, slightly different ratio of eye size, greater relative length of PLS, transverse bar of vulva located far anteriorly instead of medially, and introductory duct strongly coiled at base.

Since both species are known only from the female holotypes, it is at present impossible to decide whether they are actually species or just strongly varying specimens of common species with very wide range. From our experience, however, distribution of the same hersiliid species across the Nullarbor Plain is rather unlikely.

Identification

For identification the key to species in the revision (Baehr & Baehr 1987) should be altered as following:

Couple 36 – cancel

'South-western Australia..... ..... *pseudocircumvidens* Baehr & Baehr' then add

'36 a. Bridge located rather posteriorly between RS. ID basally not coiled (Fig 34). South-western Australia ..... *pseudocircumvidens* Baehr & Baehr

–Bridge located rather anteriorly at apex of RS. ID basally strongly coiled. Eastern central South Australia ..... *ediacarae* sp. nov.'

Tamopsis fickerti (L. Koch)
(Fig. 5)

Chalinura fickerti L. Koch, 1876: 830

This is a widely distributed species in eastern Australia, though not yet reliably recorded either from Victoria or South Australia. Females of this species are at first glance recognized by their heart-shaped median plate in the epigyne.

New records

South Australia: 1 female (N 1987189), Renmark, 27.iv.1981, Coll. R.V. Southcott; 1 male (N 1987190), Mitcham, Adelaide, 14. xi. 1986, Coll. R. V. Southcott; 1 male (N 1987191), Bellevue Heights, Adelaide, 5. xii.1979, Coll. A. Bowie; 5 females, 1 juv. (N 1987192), Belair N.P., Mt Lofty Ranges, i.1936, Coll. H. Womersley; 2 females (N 1987193), Belair N.P., 16.ii.1936, Coll. H. Womersley.

Habits

For habits of this species see Baehr & Baehr (1987). Several label notes of the SAMA specimens give evidence of a rather common occurrence of *T. fickerti* on walls and houses. In the wild, however, this is a true tree-inhabiting species, living on the bark of diverse eucalypts.

T. fickerti seems to be rather common in the environs of Adelaide and is perhaps distributed over the whole of south-eastern Australia from south-eastern Queensland to at least Adelaide in South Australia.

Discussion

As demonstrated by the present work, the Australian Hersiliidae fauna is not yet adequately known. Certainly still more species are likely to be discovered and the range of most species is far from being exactly known, because several species are only known from single specimens or from a single locality. This is certainly due to the inadequate exploration of vast areas, especially in central, western, and north-western Australia, and also to the difficulties of collecting such extremely well-camouflaged spiders as Hersiliidae which commonly sit motionless in small hollows on the bark of trees or attached on branches.

The following comments stress or slightly alter those in our revision (Baehr & Baehr 1987):

1. Northern Queensland is one of the regions possessing the most diverse hersiliid fauna. Most species, however, are rather unspecialized. Although the newly described *T. forresti* of north Queensland belongs to a derivative species group, within this group it is also rather unspecialized.

2. Some species are far more widely distributed than hitherto realized. This applies mainly to species occurring in well-wooded eastern, south-eastern, and southern Australia, where tree-dwelling species are able to spread more easily over wide ranges.

3. No species were previously known from central Australia and very few from South Australia, but both faunas are more diverse than supposed.

Acknowledgments

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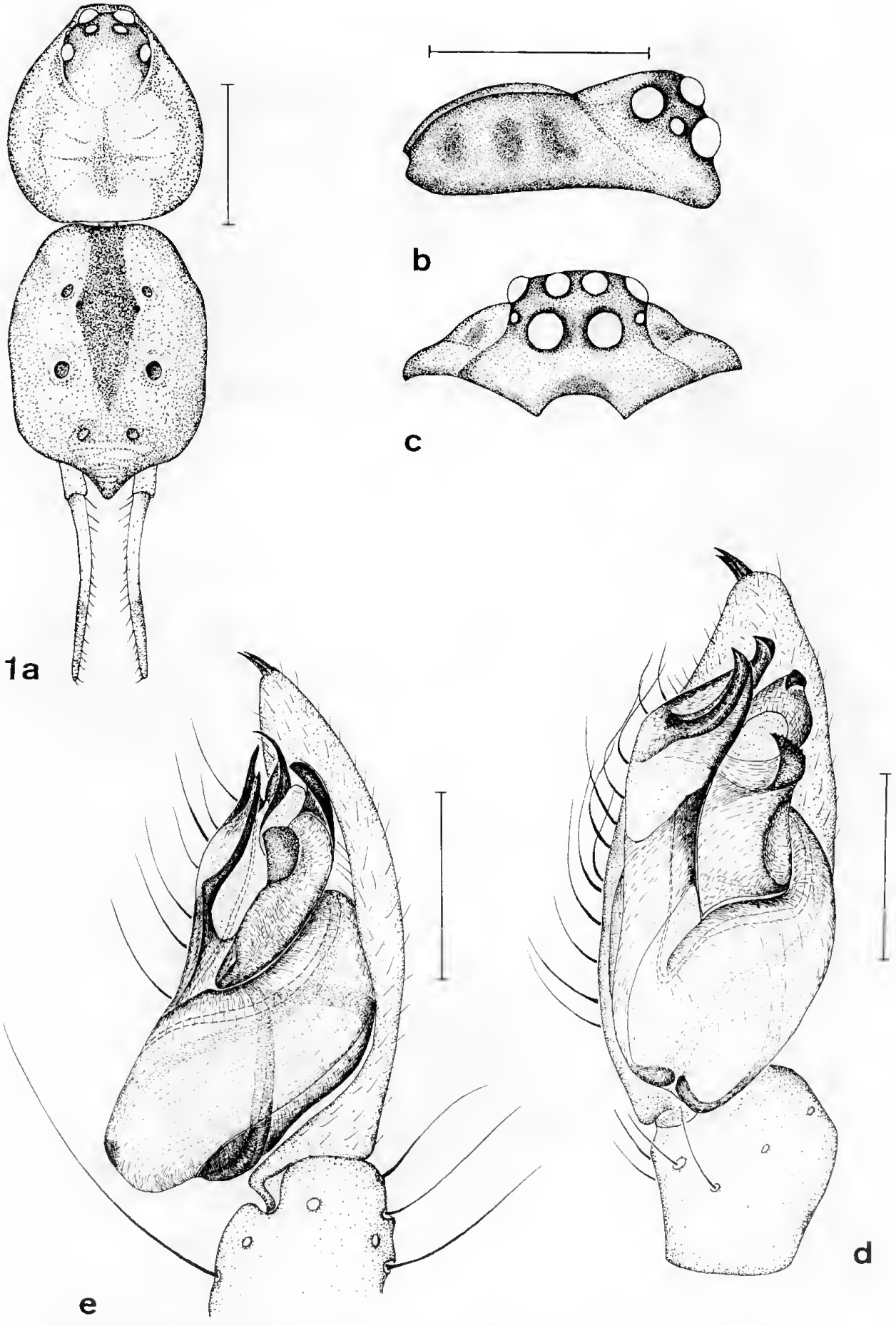

FIGURE 1. *Tamopsis forresti* sp. nov., male holotype. a. Body shape; b. Lateral view of head; c. Frontal view of head; d. Ventral view of palpus; e. Lateral view of palpus. Scales: a, b, c: 1 mm, d, e: 0.25 mm.

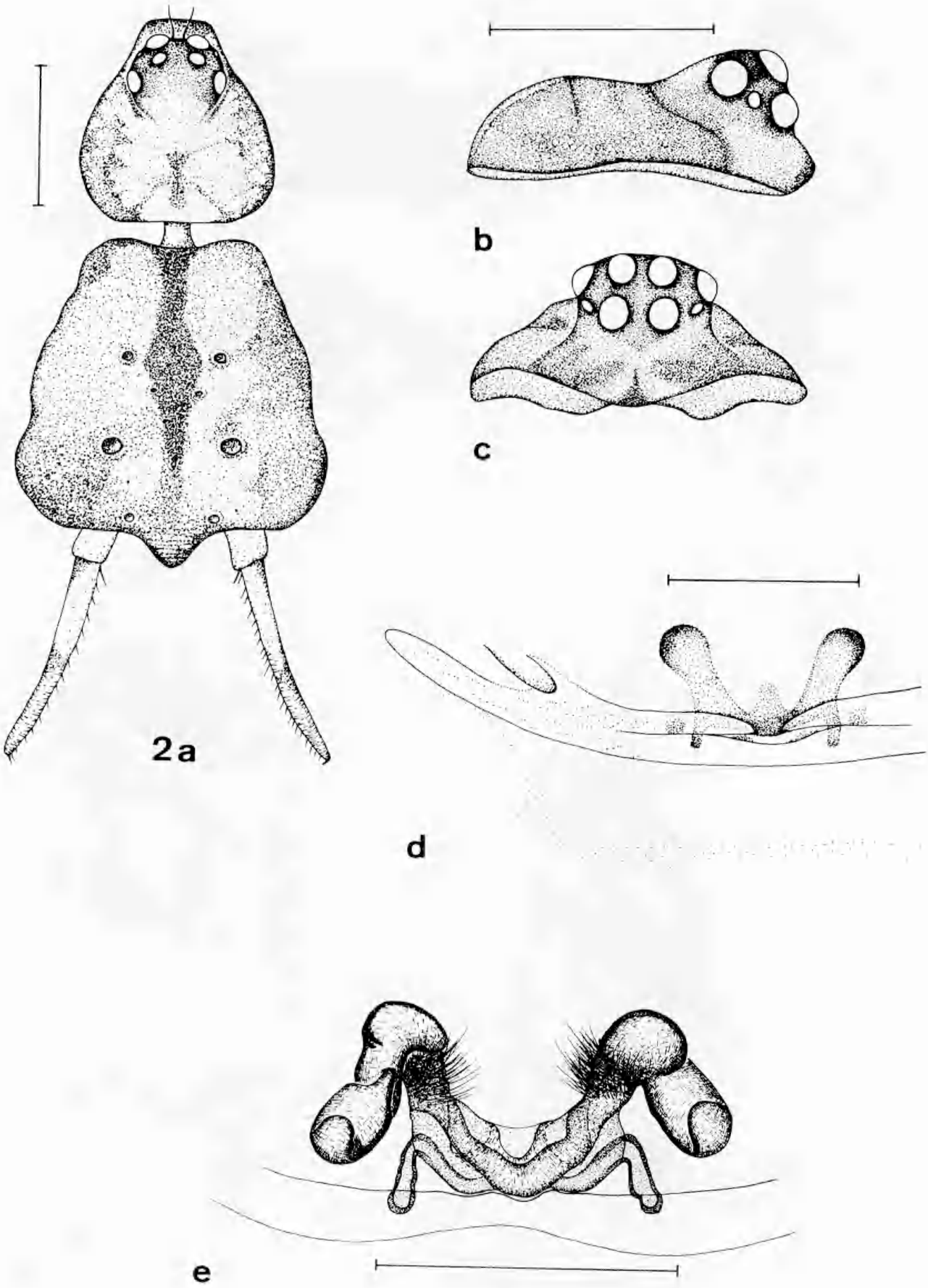

FIGURE 2. *Tamopsis forresti* sp. nov., female paratype. a. Body shape; d. Lateral view of head; c. Frontal view of head, d. Epigyne; e. Vulva. Scales: a, b, c: 1 mm, d, e: 0.25 mm.

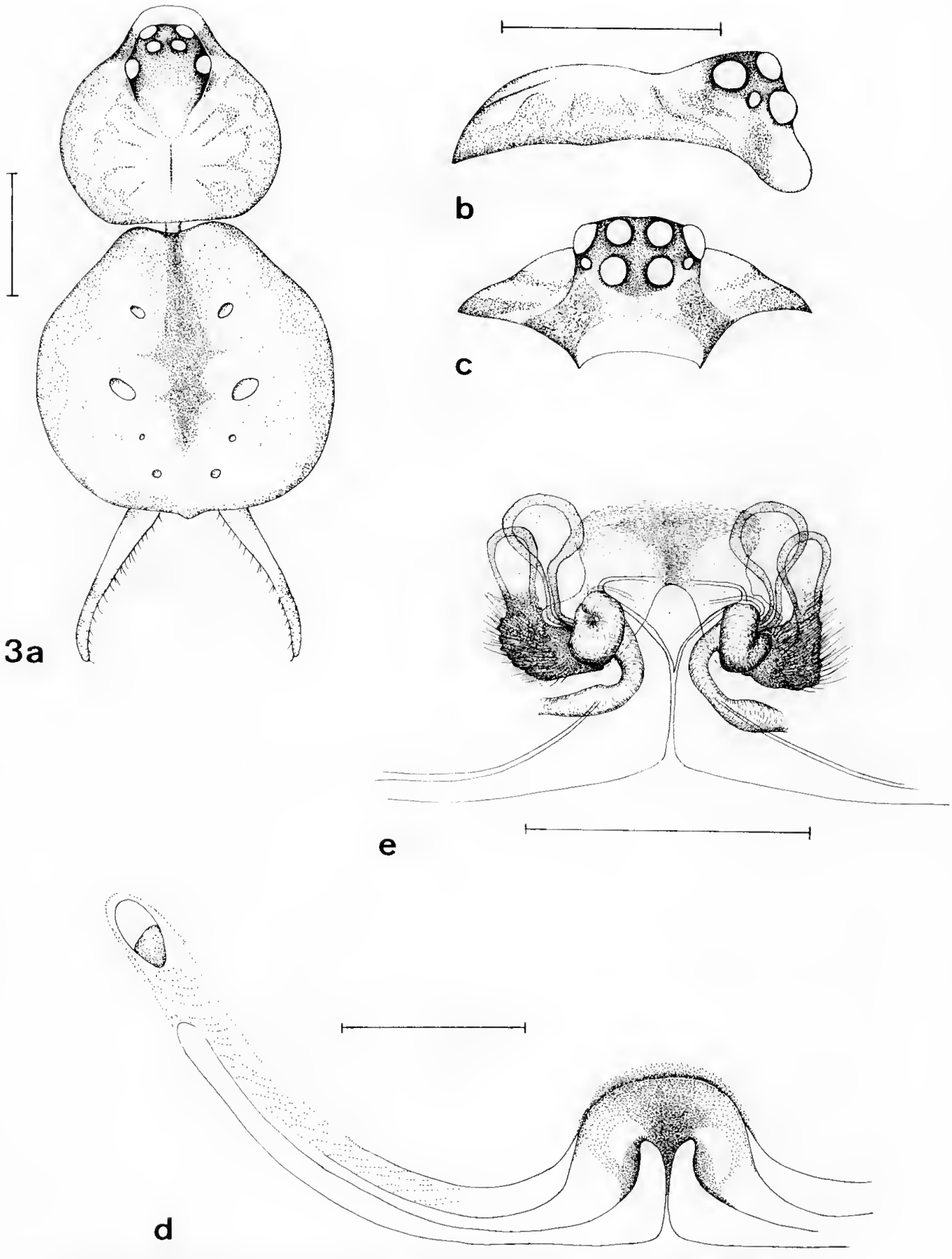

FIGURE 3. *Tamopsis ediacarae* sp. nov., female holotype. a. Body shape; b. Lateral view of head; c. Frontal view of head; d. Epigyne; e. Vulva. Scales as in Figure 2.

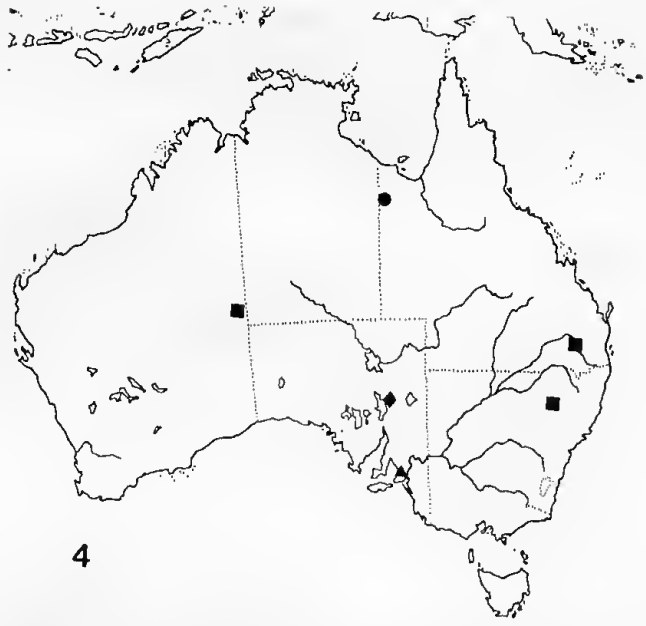

FIGURE 4. Distribution of *Tamopsis queenslandica* Baehr & Baehr: ■, *T. raveni* Baehr & Baehr; ▲, *T. forresti* sp. nov.: ●, and *T. ediacarae* sp. nov.: ♦.

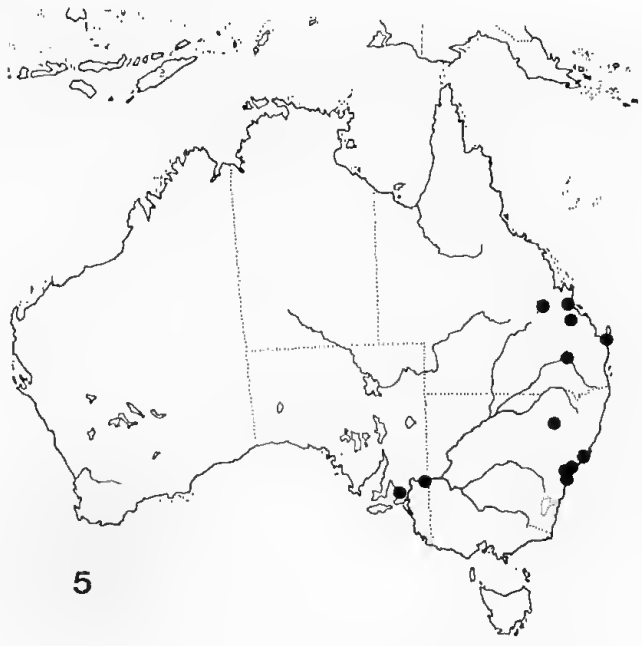

FIGURE 5. Distribution of *Tamopsis fickerti* (L. Koch), revised map.